

REMARKS

Claims 1-26 currently appear in this application. The Office Action of March 20, 2006, has been carefully studied. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicant respectfully requests favorable reconsideration, entry of the present amendment, and formal allowance of the claims.

Election/Restriction

It is noted that the election of species requirement is made final.

Art Rejections

Claims 1-3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Ciampi et al. U.S. Published Application No. 2002/0121482.

This rejection is respectfully traversed. Claim 1 has been amended to recite that the method "consists of" contacting the contaminated water with a ruthenium ion. Ciampi adds an oxide of a metal such as ruthenium to a mixing chamber for producing ferrate ion. The mixture of ferrate ion and metal oxide can be used for cleaning or oxidizing water.

As discussed at paragraph 0041 et seq., ruthenium, because it belongs to the same elemental group as iron, Group VIIIA, was expected to behave similarly to iron in sorbing

cations. However, ruthenium has a larger ionic radius than iron, and it has found that this larger radius allowed more efficient sorption and oxidation of larger elements such as lead and anionic compounds such as arsenate and arsenite. Ruthenium compounds can sorb a wide range of inorganic compounds, organic compounds, and elements across a pH range of 2-10. This sorption is extremely rapid. Ruthenium rapidly oxidizes reduced forms of inorganic and organic compounds or elements, followed by rapid sorption of the oxidation product.

There is nothing in Ciampi which discloses or suggests using ruthenium by itself for treating water.

Claim 1 has been amended to recite other members that can be used in combination with ruthenium for purifying water. Support for this amendment can be found in the specification as filed at paragraph 0043, pages 43 and 44.

Claims 6 and 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ciampi.

This rejection is respectfully traversed. Ciampi discloses that steps involving oxidation, adsorption and precipitation can be carried out by ferrate in removing arsenic from water. Claims 6 and 8-10, which depend from claims 5 and 1, are directed to a method for removing chemical and biological contaminants from water consisting of contacting the water with an effective amount of at least one

ruthenium compound; wherein the chemical and biological contaminants are selected from chemical compounds and biological substances which are positively or negatively charged in ionic form or which are charged compounds or substances. [emphasis added]. There is neither disclosure nor suggestion in Ciampi of using ruthenium ions alone to treat water contaminated with arsenic.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ciampi as applied above, and further in view of Benjamin et al, U.S. Patent No. 5,911,882.

This rejection is respectfully traversed. As noted above, Ciampi neither discloses nor suggests using ruthenium alone for treating water. Benjamin adds nothing to cure this defect in Ciampi, as Benjamin merely discloses that it is known to coat an adsorbent for arsenic on a support material.


It is noted that Smith, U.S. Patent No. 6,602,421 and Witham, U.S. Patent No. 6,863,825, merely disclose that arsenic is present in water in various ionic forms. It is noted that neither of these patents has been cited against the present claims.

Appln. No. 10/698,358
Amd. dated June 19, 2006
Reply to Office Action of March 20, 2006

In view of the above, it is respectfully submitted
that the claims are now in condition for allowance, and
favorable action thereon is earnestly solicited.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.
Attorneys for Applicant

By: 
Anne M. Kornbau
Registration No. 25,884

AMK:srd
Telephone No.: (202) 628-5197
Facsimile No.: (202) 737-3528
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